# CLEAN RIVERS PROGRAM BASIN STEERING COMMITTEE 3/23/17

Introducing Lisa Arceneaux, P.E. Environmental Engineer

#### Who am I?:

Environmental Engineer since 1982

Hazardous waste management first for 20 years

Stormwater Management for the past 10 years, construction site inspections, plan reviews, MS4 work.

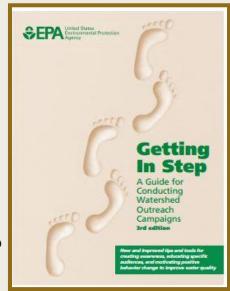
Watershed Protection Plans, 319 grant application, Low Impact Development

Field Engineer for:
Construction oversight



## How Have I Worked With Watershed Protection Plans?

- Education and Outreach Committee for the Upper San Marcos Watershed Protection Plan
- Meredith Miller at the Meadows Center, Cindy Jimenez with GBRA
- Reviewed other WPPs for ideas:
  - Geronimo and Alligator Creek,
  - Plum Creek,
  - Cypress Creek,
  - Arroyo Colorado
- Assisted with 319 Grant Applications for the Upper San Marcos River WPP
- Worked with Geronimo and Alligator Creek WPP LID Implementation
- Working on Plum Creek WPP LID Implementation for Lockhart



# How do I know about construction?

- ★ Developed the Construction/Stormwater Program at Texas State University
- ★ Field engineer for construction: parking garages, administrative buildings, dorms, green houses, permeable paver parking lots, linear utility projects.
- ★ 100s of weekly inspections with contractors, supervisors, field engineers, workers.
- ★ Numerous plan reviews and comments

Like to solve problems collaboratively



# What do I know about Low Impact Development?



I have been studying it for >5 years

Numerous classes: Forrester On Line, In person classroom, SARA certifications, ICPI Certifications

Passion for development in this way

Successful demonstration projects = acceptance and progress

## The 3 C's Paradigm

- Collect
- Convey
- Centralize

Not an easy pathway to change from the old way to the new way.

Low Impact

## The 3 D's Paradigm

- Disconnect
- Distribute
- Decentralize

## Recent Projects: Seguin Outdoor Learning Center for GBRA



Photo Credit: Drone 2016 by Forrest M. Mims III



True Grid Parking Lot

## Seguin Outdoor Learning Center: Biofiltration Area:

Worked with Mike Urrutia, Lauren Willis, Dr. Jabor, Ward Ling, Diana Kimble

Landscape Contractor, New Earth, TetraTech.

Learned a lot and both systems are very functional in terms of good infiltration, plant growth, beauty.



#### Plum Creek Watershed: Nick Dornak

**Caldwell County Justice Center** 



2-acre parking lot, runoff untreated



## Plum Creek WPP 319 Grant: LID Improvements Planned:

- Rainwater Collection Cistern
- Permeable Paver lot with landscape watered by collected rainwater
- Rain Gardens, grass swales,
- Focal Point
- Xeriscape areas
- Multiple contractors/site visits
- Plan reviews
- Cost Estimates
- TCEQ and Owner collaboration meetings

#### Next Steps for CCJC

- Contracts in place;
- Coordinate and oversee excavation and subbase prep by the County;
- Work with the cistern, paver and bioretention contractors in construct the features on the south side of the building: "new lot";
- Move to the "existing lot" and oversee the filed work to demo the concrete, and install the LID on this lot;
- Photo document the work for a PowerPoint presentation;
- Field test the infilatration rate of the permeable parking lot and bioretention area;
- Prepare maintenance procedures for the different LID practices.

## Texas State River House Parking Lot





#### October 2015 Flood





## Saltgrass Paver Parking Lot (20 yrs old)





## Outfall Testing and Infiltration Testing





#### In Summary:

# How can I help with LID construction at your site?

- Check conceptual design with site specific features
- Get quotes from contractors
- Construction oversight (field engineer) to make sure it is built according to plans/specs
- Watch for common errors and correct in the field

"The overall intention is to build LID so it works; for others to see, understand and accept it as the new norm."

## ANY QUESTIONS?



Elizabeth (Lisa) Arceneaux, P.E. 512-644-1927

<u>elizabeth.arceneaux@austin.rr.com</u> <u>http://eaenvironmental.net</u>